Then please cancel claims 10 and 11, and amend claims 1, 5-7 and 15 to now read as follows:

- 1. An indicator protein comprising:
  - a) a first binding moiety having a binding domain specific for a class of analytes that undergoes a reproducible allosteric change in conformation when said analytes are reversibly glucose bound;
  - b) a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner that said second and third moieties undergo a change in relative position when said analyte molecule binds to said first binding moiety; and
  - c) said second and third moieties interact to produce a fluorescent change when the relative positions of said second and third moieties change, wherein said fluorescent change can be monitored remotely by external optical means.
- 5. The protein of claim 2, wherein
  - a) said first binding moiety is a glucose binding protein from E. coli;
  - b) said second moiety is YFP; and
  - c) said third moiety is GFP.
- 6. The protein of claim 5 having the plasmid sequence shown in SEQ ID NO: 1.

- 7. A biosensing system for glucose comprising:
  - a) a biosensor element consisting of a protein
    - having a first binding moiety, which is a glucose binding protein from E.
      coli, having a binding domain specific for glucose that undergoes a
      reproducible allosteric change when glucose is reversibly bound;
    - ii. having a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner such that they change in relative position when glucose binds to said first binding moiety and wherein said second moiety and said third moiety interact to produce a fluorescent change when their relative positions change wherein said fluorescent change can be monitored remotely by external optical means; and
    - iii. that is immobilized to a solid surface or retained within a permeable capsule;
  - the placement of said biosensor element in subcutaneous contact with a fluid of interest so that said biosensor element can be illuminated and emitted light detected; and
  - c) an external optical system for illumination of said biosensor element and detection of emitted radiation.

- 15. A method for noninvasively measuring glucose within cells wherein
  - a. plasmid coding for a protein having
    - i. a first binding moiety having a binding domain specific for a class of analytes that undergoes a reproducible allosteric change in conformation when said analytes are reversibly glucose bound;
    - ii. a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner that said second and third moieties undergo a fluorescent change in relative position when said analyte molecule binds to said first binding moiety; and
    - iii. said second and third moieties undergo a fluorescent change in optical properties when the relative positions of said second and third moieties, wherein said change can be monitored remotely by external optical means when introduced into cells;
  - b. said protein is expressed in the cells; and
  - c. said fluorescent changes are measured optically by an external instrument having an optical system for illumination and detection of emitted radiation.